From: Bilhimer, Dustin (ECY)
To: PUGETSOUND-OXYGEN@LISTSERV.ECOLOGY.WA.GOV
Subject: Puget Sound Nutrient Forum: Please Register for July 16
Date: Friday, June 22, 2018 9:55:15 AM

Good morning,

We are gearing up again for the next Puget Sound Nutrient Forum that is taking place July 16 at Ecology's main building in Lacey (300 Desmond Drive SE). I will send out an agenda with more details in early July. Right now I'm working on getting regional scientists and researchers to share their findings related to:

- Physiological and behavioral changes in salmonids and forage fish in response to low DO conditions in the marine environment
- Marine food web changes in response to shifts in marine water quality
- And I'm working on lining up more topics for this meeting and our next meeting in August

As before, I would ask that you take a few minutes to respond to our registration survey (https://www.surveymonkey.com/r/G3ZPL2K). The survey just asks if you are attending in person or via webex, and includes another link to register for the WebEx. Your responses help me plan, thank you for responding. Feel free to forward this to others you think may be interested.

Please don't forget to click on that second link for the WebEx if that is how you choose to attend. We recognize that our building isn't as centrally located for many of you, we are trying to balance cost/technology needs/room size/availability and decided we would host the July and August Forums in Lacey.

I have also posted the notes from the May 30 Forum on the web:
https://www.ezview.wa.gov/Portals/_1962/Documents/PSNSRP/May%2030%20Nutrient%20Forum%20Notes.pdf

Finally, there are two recent publications that I would also like to highlight. Both are posters from last Spring's Salish Sea Ecosystem Conference.

A King County poster, **Extending Observations Further: Using Historical Biogeochemical Data to Understand Changes in an Estuary**, is available at
http://green2.kingcounty.gov/ScienceLibrary/Document.aspx?ArticleID=487

- Increased understanding of biogeochemical changes over decadal scales is needed to help explain long-term water quality status and trends. Traditionally, monitoring programs use their own data. Here, other available data measured at different temporal scales are combined with King County data records to explore deep dissolved oxygen and nutrient dynamics at a single location in Central Puget Sound, a deep inland estuary. Some challenges with combining datasets include method and detection limit changes, sampling frequency and depth changes, and potential quality control issues.

An Ecology poster, **Recent climate patterns are affecting seasonal water residence times and water temperatures in Puget Sound**, is available at
https://fortress.wa.gov/ecy/publications/SummaryPages/1803023.html.

- In this analysis, we contrasted temperature records from Ecology's long-term dataset using 2014-2017 to infer residence time and changes in water masses during the extreme climate years. At the end of 2014, water temperatures in Puget Sound rapidly increased in response to the surface-temperature anomaly known as "The Blob," and higher temperatures persisted into 2017. Climate anomalies over land caused premature snowmelt and freshening of Puget Sound. The seasonal shift in freshwater delivery increased winter estuarine circulation, which allowed greater import of heat from the ocean but decreased summer circulation. This caused heat retention in Puget Sound during the summer. In both seasons, Puget Sound temperatures increased, affecting water quality and ecosystem performance. Increased winter temperatures >8 °C may have promoted overwintering for temperature-sensitive species such as Northern anchovy.

Enjoy the beginning of summer!

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